Water Turbidity

Topic: Water

Objectives: Determine water turbidity using a Secchi disc

Grade Level: all (early grades will need adult help with measurements)

Time: 10 – 15 minutes

Materials: Secchi disc, rope with measurement markings, writing pads, pens or pencils

Vocabulary:
turbidity
Secchi disc
microorganism
algae

Location: Lake Clara Meer

Background: A naturally clear liquid, like water, may look cloudy or muddy due to particles of matter suspended in it. This cloudy appearance is called turbidity. Algae and suspended particles of silt, plant fibers, sawdust, chemicals, and microorganisms are some of the causes of turbidity in water. Turbidity affects the penetration of sunlight into a body of water. This, in turn, affects algae and fish and other aquatic life. A simple way to test the turbidity of water is with a device called a Secchi disc. A Secchi disc is a circular plate marked off in black and white sections. In this activity, you will use a Secchi disc to determine the turbidity of Lake Clara Meer.

Procedure:

1. Standing in the shade, or with the sun at your back, lower the Secchi disc into the water until it just disappears. Using the markings on the rope, record the depth of the Secchi disc.

2. Next slowly raise the Secchi disc until you can just see it again. Record the depth of the Secchi disc at this point.

3. Repeat this procedure yourself or have another student repeat it. Compare your measurements. If they differ by more than 10 centimeters, one of you may have made a mistake. Try the experiment a third time to be sure you did not make a mistake.

Questions to think about and discuss:

1. Look at the data on turbidity you collected. Compare your data to the water turbidity chart. How would you classify Lake Clare Meer in terms of clarity?

Water Turbidity Chart

	Clear Ponds	**Intermediate Ponds**	**Muddy Ponds**
Secchi disk disappears	Over 3 meters	1 – 3 meters	Less than 1 meter

2. How do you suppose turbidity and temperature are related? How might turbidity change as temperature increases or decreases? Why do you suppose this would happen?

3. What do you think accounts for the measurement you found today? How might the turbidity reading differ if you measured it on a different day or at a different time of day or at a different time of year?

4. How might turbidity differ if you measured it on a day after a heavy rain compared to a measurement taken during a dry spell? What do you suppose might cause this difference?

5. How do you think the location of Lake Clara Meer relates to its turbidity? See if you can think of both man-made as well as natural factors that might affect its turbidity reading.

6. What types of living things might you expect to find above the depth at which the Secchi disk disappeared? What types might you find below?